

Mineral Industry Surveys

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COPPER IN AUGUST 1999

Mine production in August declined by about 7% from the revised production in July, continuing the downward trend in domestic concentrate and electrowon production. Preliminary USGS forecasts indicate that U.S. mine production in 1999 will fall to 1,660,000 tons, 11% less than 1998 production and 14% less than the record-high production of 1997. Primary refined production was unchanged in August. The drop in primary refined production that occurred in the June-July period reflects the increasing anode shortage following shutdown of the BHP San Manuel smelter in May. Consumption of refined copper at wire-rod mills in August rose sharply, 16%, from July's traditionally low level, and was up by about 22% from that of the August 1998 level. This contrasts sharply with the first 6 months of 1999 when consumption was unchanged from that of the equivalent 1998 period. Inventories of refined copper in August declined for the third consecutive month as strong wire-rod production led to a decline in consumer inventories and stocks were withdrawn from Comex warehouses in Arizona, reflecting the shortfall in refinery production.

On September 1, Phelps Dodge Mining Company announced plans to reduce future cash production costs by approximately 9 cents per pound of copper at its Morenci Mine in Arizona. The cost reduction would be achieved by converting all production to leaching through expansion of Morenci's solvent extraction/electrowinning facilities. According to Phelps Dodge, the \$220 million conversion, scheduled for completion in early 2001, will allow the Morenci Mine to sustain copper production at its current annual rate of approximately 360,000 metric tons. Upon conversion, sulfide concentrators will be placed on stand-by status. In 1998, Morenci produced 224,000 tons of copper in concentrates, and 250,000 tons of electrowon copper (Phelps Dodge Corporation, 1999a).

In July, Cyprus Amax Minerals Company and ASARCO Incorporated announced a merger-of-equals agreement, which

was countered by Phelps Dodge through an unsolicited bid to acquire the assets of both companies. As of September 22, numerous proposals and counter proposals by the three companies had been tendered, as outlined in "Copper in July 1999."

Merger Update

- On September 24, Grupo Mexico, S.A. de C. V. entered the contest for control of Asarco when it tendered a cash offer of \$26 per share of Asarco stock (Grupo Mexico, S.A. de C. V., 1999). Grupo Mexico, through its subsidiary Grupo Minero Mexico, owns the Cananea and La Caridad mines, smelters, and refineries. This offer is not surprising given Asarco's long term involvement in the Mexican copper mining sector that dates back to 1901, when Asarco first began mining in Mexico. In 1965, Asarco Mexicana was formed with 51% Mexican ownership. In 1978, Grupo Mexico was formed, with subsidiary Mexico Desarrolla Industrial Minero, S. A. de C. V. (Medisma) controlling its mining assets. In 1996, Asarco still retained a 23.6 % interest in Medisma and in 1997 it reduced its holdings, selling 106.3 million of its 162.6 million shares of Grupo Minero Mexico (formerly Medisma).
- On September 30, Phelps Dodge and Cyprus Amax announced that they had signed a merger agreement under which Phelps Dodge would acquire Cyprus Amax for \$7.61 in cash and 0.2203 Phelps Dodge shares for every Cyprus share. Phelps Dodge anticipated cash cost savings of at least \$100 million from the merger (Phelps Dodge Corp. and Cyprus Amax Minerals, 1999).
- On October 6, Phelps Dodge announced that it had signed a definitive merger agreement with Asarco under which it would

acquire Asarco for \$14.75 and 0.2513 Phelps Dodge shares per Asarco share, with the offer expiring at midnight on October 21. An all cash option of \$29.50 per Asarco share and an all stock option of 0.50266 per Asarco share were also tendered. Phelps Dodge anticipated a cash operating savings from the 3-way merger of at least \$200 million (Phelps Dodge Corp., 1999b)

- On October 7, Grupo Mexico increased its offer for Asarco to \$2.24 billion in cash, \$29.50 per share. On October 15, Asarco notified Phelps Dodge that it would accept a newly increased cash purchase offer from Grupo Mexico of \$2.25 billion, \$29.75 per share, thus terminating its merger agreement with Phelps Dodge and paying Phelps Dodge a contractual termination fee of \$30 million (ASARCO Incorporated, 1999). Phelps Dodge had steadfastly refused to increase its offer to

match or surpass that of Grupo Mexico.

References Cited

- ASARCO Incorporated, 1999, Asarco notifies Phelps Dodge of intention to accept new Grupo Mexico \$29.75 per share offer: New York, ASARCO Incorporated press release, October 15, 1 p.
- Grupo Mexico, S.A. de C. V., 1999, Grupo Mexico offers to acquire Asarco Inc.: Mexico City, Grupo Mexico, S.A. de C. V. press release, September 24, 2 p.
- Phelps Dodge Corp., 1999a, Phelps Dodge Morencito convert all copper production to leaching; will see unit cost reduction of 10 percent: Phoenix, Phelps Dodge Corp. press release, September 1, 2 p.
- 1999b, Phelps Dodge to acquire Asarco; three-way combination with Cyprus Amax will create leading global copper producer: Phoenix, Phelps Dodge Corp. press release, October 6, 2 p.
- Phelps Dodge Corp. and Cyprus Amax Minerals, 1999, Phelps Dodge to acquire Cyprus Amax: Phoenix and Denver, Phelps Dodge Corp. and Cyprus Amax Minerals press release, September 30, 2 p.

TABLE 1
SALIENT STATISTICS OF THE COPPER INDUSTRY IN THE UNITED STATES 1/

(Metric tons, unless noted)

	Source table 2/	1998 p/	1999		
			July	August	January - August
Production:					
Primary:					
Mine, recoverable	(2)	1,860,000	128,000 r/	118,000	1,120,000
Smelter 3/	(3)	1,490,000	84,100 r/	90,600	797,000
Refinery:					
Electrolytic:					
Domestic	(4)	1,290,000	77,300 r/	83,200	759,000
Foreign	(4)	238,000	15,100 r/	11,900	147,000
Electrowon	(4)	609,000 r/	48,200 r/	46,300	394,000
Total	(4)	2,140,000 r/	141,000 r/	141,000	1,300,000
Secondary recoverable copper:					
Refineries	(5)	336,000	21,200	18,200	155,000
Ingot makers 4/	(5)	132,000	11,000	11,000	87,800
Brass and wire-rod mills	(5)	811,000	66,200 r/	69,300	556,000
Foundries, etc.	(5)	55,400	4,610	4,610	36,900
Consumption:					
Total apparent	(8)	3,020,000	235,000	NA	NA
Refined (reported)	(7)	2,880,000	237,000 r/	264,000	2,000,000
Purchased copper-base scrap	(9)	1,720,000	146,000	148,000	1,210,000
Stocks at end of period:					
Total refined	(11)	531,000	634,000 r/	620,000	XX
Blister, etc.	(11)	160,000	137,000 r/	154,000	XX
Prices:					
U.S. producer cathode (cents per pound) 5/	(12)	78.641	79.677	79.692	71.784
Imports: 6/					
Ores and concentrates 7/	(14)	217,000	--	NA	NA
Refined	(14)	683,000	73,000	NA	NA
Exports: 6/					
Ores and concentrates 7/	(15)	36,500	3,700	NA	NA
Refined	(15)	86,200	1,560	NA	NA

p/ Preliminary. r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits, except prices; may not add to totals shown.

2/ Numbers in parentheses refer to the detailed tables where these data are located.

3/ From domestic and foreign ores.

4/ Monthly data estimated based on 1997 monthly average.

5/ Source: Platt's Metals Week.

6/ Source: Bureau of the Census.

7/ Copper content.

TABLE 2
MINE PRODUCTION OF RECOVERABLE COPPER
IN THE UNITED STATES 1/

(Metric tons)

Period	State		Total
	Arizona	Others 2/	
1998: p/			
August	102,000	61,700 r/	164,000 r/
September	97,200 r/	57,000 r/	154,000
October	96,100 r/	60,100 r/	156,000
November	97,500 r/	57,500 r/	155,000
December	101,000	56,700 r/	158,000 r/
January - August r/	801,000	438,000	1,240,000
Year	1,190,000	670,000 r/	1,860,000
1999:			
January	99,400	55,500	155,000
February	89,700 r/	48,300	138,000
March	102,000	56,800	159,000
April	95,100 r/	49,300 r/	144,000
May	95,500	47,800	143,000
June	87,300 r/	45,300	133,000
July	86,300	41,400	128,000
August	77,300	41,100	118,000
January - August	733,000	385,000	1,120,000

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes production from Alaska, Idaho, Missouri, Montana, Nevada, New Mexico, Tennessee, and Utah.

TABLE 3
COPPER PRODUCED AT SMELTERS IN THE
UNITED STATES, BY SOURCE 1/ 2/

(Metric tons, copper content)

Period	Domestic and foreign ores		Total
		Scrap	
1998: p/			
August	121,000	19,700	141,000
September	116,000	18,000	134,000
October	156,000	17,100	173,000
November	134,000	19,000	153,000
December	120,000	18,000	138,000
January - August	960,000 r/	160,000 r/	1,120,000
Year	1,490,000	232,000	1,720,000
1999:			
January	106,000	18,300	125,000
February	113,000	16,100	129,000
March	116,000	14,700	131,000
April	124,000	15,600	140,000
May	85,400	14,000	99,400
June	77,000 r/	18,600	95,700
July	84,100 r/	18,100	102,000 r/
August	90,600	18,300	109,000
January - August	797,000	134,000	931,000

p/ Preliminary. r/ Revised.

1/ Includes blister, anode and black copper from primary or secondary sources.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 4
PRODUCTION OF REFINED COPPER, BY SOURCE AND METHOD OF RECOVERY 1/

(Metric tons)

Period	Primary materials				Scrap			Total refined
	Electrolytically refined 2/		Electrowon	Total	Electro-lytically refined 2/	Fire refined	Total	
	Domestic 3/	Foreign						
1998: p/								
August	106,000	19,000	52,700 r/	178,000 r/	11,800	13,400	25,200	203,000 r/
September	102,000	23,200	50,000 r/	175,000 r/	15,600	9,380	25,000	200,000 r/
October	107,000	26,100	49,800 r/	183,000 r/	17,500	15,500	33,100	216,000 r/
November	106,000	24,400	51,400 r/	182,000 r/	14,700	8,630	23,300	206,000 r/
December	115,000	22,300	52,900 r/	190,000 r/	17,000	9,320	26,400	217,000 r/
January - August r/	863,000	142,000	405,000	1,410,000	137,000	91,600	228,000	1,640,000
Year	1,290,000	238,000	609,000 r/	2,140,000 r/	202,000	134,000	336,000	2,480,000 r/
1999:								
January	85,400	26,700	52,100 r/	164,000 r/	12,500	7,230	19,700	184,000 r/
February	84,200	24,200	47,300 r/	156,000 r/	12,400	9,100	21,500	177,000 r/
March	117,000	25,600	52,400 r/	195,000 r/	14,700	8,970	23,700	219,000 r/
April	111,000	19,100	49,500 r/	179,000 r/	12,100	5,550	17,700	197,000 r/
May	106,000	12,300	49,500 r/	168,000 r/	11,300	4,880	16,200	184,000 r/
June	95,500	12,100	48,900 r/	157,000 r/	12,500	5,010	17,500	174,000 r/
July	77,300 r/	15,100 r/	48,200 r/	141,000 r/	13,500	7,660	21,200	162,000 r/
August	83,200	11,900	46,300	141,000	13,500	4,690	18,200	160,000
January - August	759,000	147,000	394,000	1,300,000	102,000	53,100	156,000	1,460,000

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Based on source of material at smelter level.

3/ Includes fire-refined copper.

TABLE 5
COPPER RECOVERABLE IN UNALLOYED AND ALLOYED FORM FROM PURCHASED COPPER-BASED SCRAP 1/

(Metric tons, copper content)

Period	Refineries 2/		Ingot makers 3/		Brass and wire-rod mills		Foundries, etc. 4/		Total 5/
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
1998: p/									
August	7,550	17,600	2,930	8,040	61,800	2,930	956	3,660	105,000
September	4,770	20,200	2,930	8,040	67,100	3,080	956	3,660	111,000
October	9,630	23,400	2,930	8,040	67,000	2,690	956	3,660	118,000
November	4,090	19,200	2,930	8,040	63,400	2,790	956	3,660	105,000
December	4,500	21,900	2,930	8,040	61,800	1,370	956	3,660	105,000
January - August r/	50,300 r/	178,000 r/	23,500 r/	64,300 r/	522,000 r/	20,500	7,650 r/	29,300 r/	895,000 r/
Year	73,300	263,000	35,200	96,500	781,000	30,400	11,500	43,900	1,330,000
1999:									
January	3,290	16,400	2,930	8,040	64,600	2,740	956	3,660	103,000
February	4,480	17,000	2,930	8,040	66,400	3,030	956	3,660	106,000
March	5,130	18,600	2,930	8,040	72,800	3,070	956	3,660	115,000
April	3,830	13,800	2,930	8,040	67,200	2,540	956	3,660	103,000
May	3,630	12,500	2,930	8,040	66,200	2,020	956	3,660	100,000
June	3,770	13,700	2,930	8,040	67,400	2,410	956	3,660	103,000
July	5,220	16,000	2,930	8,040	64,500 r/	1,630	956	3,660	103,000
August	4,060	14,100	2,930	8,040	67,800	1,470	956	3,660	103,000
January - August	33,400	122,000	23,500	64,300	537,000	18,900	7,650	29,300	836,000

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Electrolytically refined and fire-refined scrap based on source of material at smelter level.

3/ Data no longer collected monthly; data estimated based on 1997 annual data.

4/ Data estimated based on 1997 annual data.

5/ Does not include an estimate, based on reported 1997 data, of 3,900 tons per month from new scrap and 2,530 tons per month from old scrap of copper recovered from scrap other than copper-base.

TABLE 6
PRODUCTION, SHIPMENTS, AND STOCKS OF BRASS AND WIRE-ROD MILL SEMIFABRICATES 1/

(Metric tons, gross weight)

Period	Production		Shipments		Stocks, end of period	
	Brass mills	Wire rod mills	Brass mills	Wire rod mills	Brass mills	Wire rod mills
1998: p/						
August	130,000	160,000	129,000	167,000	57,900	33,900
September	140,000	172,000	138,000	174,000	59,600	31,300
October	138,000	185,000	138,000	185,000	60,300	30,700
November	132,000	181,000	133,000	172,000	59,300	39,800
December	128,000	144,000	125,000	153,000	62,500	30,900
January - August r/	1,050,000	1,420,000	1,060,000	1,420,000	XX	XX
Year	1,590,000	2,100,000	1,590,000	2,100,000	XX	XX
1999:						
January	138,000	180,000	141,000	174,000	59,500	36,800
February	134,000	178,000	135,000	175,000	58,000	40,100
March	139,000	190,000	146,000	193,000	50,500	37,100
April	142,000	182,000	138,000	184,000	53,300 r/	35,500
May	138,000	179,000 r/	138,000 r/	178,000 r/	53,300 r/	36,400 r/
June	138,000	184,000	140,000	183,000	51,000	37,400 r/
July	122,000	169,000 r/	125,000	172,000	47,600 r/	34,800 r/
August	139,000	187,000	135,000	186,000	51,400	36,200
January - August	1,090,000	1,450,000	1,100,000	1,440,000	XX	XX

p/ Preliminary. r/ Revised. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 7
CONSUMPTION OF REFINED COPPER 1/

(Metric tons)

Period and item	Wire rod mills	Brass mills 2/	Other plants 3/	Total
1998: p/				
August	165,000	54,800	4,310	224,000
September	165,000	56,100	4,310	226,000
October	196,000	57,100	4,310	257,000
November	190,000	52,900	4,310	247,000
December	149,000	51,600	4,310	204,000
January - August	1,470,000	441,000 r/	34,500 r/	1,950,000 r/
Year	2,170,000	659,000	51,700	2,880,000
1999:				
January	186,000	58,400	4,310	249,000
February	185,000	50,900	4,310	240,000
March	209,000	55,500	4,310	269,000
April	184,000	53,800	4,310	242,000
May	184,000 r/	60,100 r/	4,310	249,000 r/
June	189,000	59,900	4,310	254,000
July	174,000 r/	58,500	4,310	237,000 r/
August:				
Cathodes	200,000	42,600	944	243,000
Wire bars	--	--	W	W
Ingots and ingot bars	--	1,520	1,540	3,070
Cakes and slabs	--	8,340	W	8,340
Billets and other	1,830	6,000	1,820	9,660
Total	202,000	58,400	4,310	264,000
January - August	1,510,000	455,000	34,500	2,000,000

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Billets and other."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ In 1997, brass mills consumed 1,500 tons of refined lead, 700 tons of pig tin, 2,300 tons of refined nickel, and 54,400 tons of slab zinc.

3/ Consumption by ingot makers, chemical plants, foundries, and miscellaneous manufacturers is estimated based on 1997 annual data.

TABLE 8
U.S. APPARENT CONSUMPTION OF COPPER 1/

(Metric tons)

Period	Refined copper production	Copper in old scrap 2/	Refined general imports 3/	Refined exports 3/	Stock change during period	Apparent consumption
1998: p/						
August	178,000 r/	34,800	49,600	6,360	14,700	241,000 r/
September	175,000 r/	37,500	77,000	5,820	37,700	246,000 r/
October	183,000 r/	40,400	53,200	4,990	15,500	256,000 r/
November	182,000 r/	36,300	70,300	3,610	37,100	248,000 r/
December	190,000 r/	37,500	54,700	6,200	64,600	212,000 r/
January - July	1,230,000 r/	277,000 r/	420,000	59,200	47,700 r/	1,820,000 r/
Year	2,140,000 r/	464,000	725,000	86,200	217,000	3,020,000 r/
1999:						
January	164,000 r/	33,400	64,700	2,350	26,000	234,000 r/
February	156,000 r/	34,300	58,500	1,120	24,700	223,000 r/
March	195,000 r/	35,900	86,000	1,840	31,300	284,000 r/
April	179,000 r/	30,600	66,300	1,340	28,000	247,000 r/
May	168,000 r/	28,800	57,100	1,630	3,080 r/	249,000 r/
June	157,000 r/	30,400	60,600	4,240	(6,710) r/	250,000 r/
July	141,000 r/	31,800	61,000	1,560	(3,390) r/	235,000
August	141,000	29,800	NA	NA	(13,600)	NA
January - July	1,160,000	225,000	454,000	14,100	103,000	1,720,000

p/ Preliminary. r/ Revised. NA Not available.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes reported monthly production of copper from old scrap of copper-base and estimates for annual reporters and of non-copper-base materials based on 1997 data.

3/ Source: Bureau of the Census.

TABLE 9
CONSUMPTION OF PURCHASED COPPER-BASE SCRAP 1/

(Metric tons, gross weight)

Period	Smelters and refineries		Ingot makers 2/		Brass and wire-rod mills 3/		Foundries, etc. 2/		Total scrap used
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
1998: p/									
August	8,950	32,500	3,910	11,700	78,000	3,010	1,130	4,090	143,000
September	5,910	25,800	3,910	11,700	84,200	3,190	1,130	4,090	140,000
October	10,600	28,600	3,910	11,700	84,800	2,770	1,130	4,090	148,000
November	5,270	29,800	3,910	11,700	80,400	2,870	1,130	4,090	139,000
December	4,900	27,500	3,910	11,700	78,500	1,440	1,130	4,090	133,000
January - August	60,800 r/	251,000 r/	31,200 r/	93,800 r/	659,000 r/	21,100	9,070 r/	32,700 r/	1,160,000 r/
Year	87,500	363,000	46,900	141,000	987,000	31,400	13,600	49,100	1,720,000
1999:									
January	4,360	43,300	3,910	11,700	81,200	2,800	1,130	4,090	153,000
February	5,490	42,800	3,910	11,700	83,900	3,130	1,130	4,090	156,000
March	5,620	39,600	3,910	11,700	92,500	3,170	1,130	4,090	162,000
April	4,340	38,300	3,910	11,700	85,700	2,620	1,130	4,090	152,000
May	4,310	36,400	3,910	11,700	83,900	2,090	1,130	4,090	148,000
June	4,390	36,100	3,910	11,700	85,500	2,500	1,130	4,090	149,000
July	5,380	37,300	3,910	11,700	80,900 r/	1,690	1,130	4,090	146,000
August	4,120	35,700	3,910	11,700	85,900	1,530	1,130	4,090	148,000
January - August	38,000	310,000	31,200	93,800	680,000	19,500	9,070	32,700	1,210,000

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data estimated from 1997 annual data.

3/ Consumption at brass and wire-rod mills assumed equal to receipts.

TABLE 10
CONSUMPTION OF PURCHASED COPPER-BASE SCRAP 1/ 2/

(Metric tons, gross weight)

Scrap type and processor	1998 p/		1999			
	January -August	Year	June	July	August	January - August
No. 1 wire and heavy:						
Smelters and refiners	103,000 t/	139,000	6,800	9,660	6,010	57,800
Brass and wire-rod mills	275,000 t/	411,000	36,400	36,500 t/	35,700	289,000
No. 2 mixed heavy and light:						
Smelters and refiners	129,000 t/	199,000	10,200	9,560	10,300	97,900
Brass and wire-rod mills	21,000	32,600	1,680	1,100	1,340	15,500
Total unalloyed scrap:						
Smelters and refiners	232,000 t/	338,000	17,000	19,200	16,300	156,000
Brass and wire-rod mills	296,000 t/	443,000	38,100	37,600 t/	37,000	305,000
Red brass: 3/						
All plants	42,000 t/	63,200	5,130	5,110	5,710	42,400
Leaded yellow brass:						
All plants	282,000 t/	422,000	36,600	32,700	35,500	284,000
Yellow and low brass:						
All plants	40,300	60,700	5,760	5,840	5,960	48,600
Cartridge cases and brass:						
Smelters and refiners	W	W	W	W	W	W
Brass mills	55,500	81,700	6,900	5,700	7,120	53,400
Auto radiators:						
Smelters and refiners	41,300 t/	61,400	5,950	5,950	5,950	47,900
Bronzes:						
Smelters and refiners	8,060 t/	12,100	1,010	1,010	1,010	8,060
Brass mills	8,930 t/	13,600	602	638	744	6,620
Nickel-copper alloys:						
All plants	11,300	17,100	1,670	1,820	2,200	14,200
Low grade & residues:						
Smelters and refiners	83,200 t/	119,000	23,400	23,400	23,400	189,000
Other alloy scrap: 4/						
Smelters and refiners 5/	13,500 t/	20,200	1,590	1,590	1,590	14,400
Brass mills	3,050	4,620	399	399	399	3,230
Total alloyed scrap:						
Smelters and refiners	205,000 t/	300,000	39,100	39,100	39,100	317,000
Brass mills	385,000 t/	575,000	49,900	45,000	50,400	395,000
Total scrap:						
Smelters and refiners	437,000 t/	638,000	56,100	58,300	55,400	473,000
Brass and wire-rod mills	680,000 t/	1,020,000	88,000	82,600 t/	87,500	699,000

p/ Preliminary. t/ Revised. W Withheld to avoid disclosing company proprietary data.

1/ Does not include: consumption by foundries, chemical plants, and miscellaneous manufacturers, estimated to total about 5,200 tons of scrap per month in 1997; monthly data include estimates of about 32,000 tons of scrap per month consumed by ingot makers and several smelters that report on an annual basis.

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Includes composition turnings, silicon bronze, zincy bronze, railroad car boxes, cocks and faucets, gilding metal, and commercial bronze.

4/ Includes refinery brass, beryllium copper, phosphor copper, and aluminum bronze.

5/ Includes items indicated by symbol W.

TABLE 11
COPPER STOCKS AT END OF PERIOD 1/

(Metric tons)

Period	Crude copper 2/	Refined copper					Total refined	
		Refineries 3/	Wire rod mills 3/	Brass mills 3/	Other 4/	Comex 5/		LME 6/
1998: p/								
August	153,000	40,700	32,100	21,400	2,700	51,400	228,000	376,000
September	144,000	37,500	37,100	21,400	2,700	61,400	254,000	414,000
October	156,000	35,100	25,100	15,500	2,700	69,400	282,000	429,000
November	182,000	34,300	28,200	17,500	2,700	67,700	316,000	466,000
December	160,000	44,200	37,300	20,800	2,700	85,200	341,000	531,000
1999:								
January	143,000	45,600	43,100	20,600	2,700	92,400	353,000	557,000
February	148,000	44,100	32,400	22,000	2,700	104,000	377,000	582,000
March	132,000	48,200	29,700	21,000	2,700	112,000	400,000	613,000
April	147,000	49,200	27,200	21,200	2,700	120,000	420,000	641,000
May	132,000	43,200	34,700 r/	20,600 r/	2,700	119,000	424,000	644,000 r/
June	134,000 r/	44,200 r/	32,500 r/	18,600	2,700	121,000	418,000	637,000
July	137,000 r/	42,700 r/	37,800 r/	20,500	2,700	109,000	421,000	634,000 r/
August	154,000	46,600	29,700	18,500	2,700	98,700	424,000	620,000

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Copper content of blister and other materials in transit and in process of refining.

3/ Stocks of refined copper as reported; no estimates are made for non-respondents.

4/ Monthly estimates based on reported and 1997 annual data, comprising stocks at secondary smelters, chemical plants, foundries, and miscellaneous manufacturers.

5/ Commodity Exchange Inc., New York.

6/ London Metal Exchange Ltd., U.S. warehouses.

TABLE 12
AVERAGE PRICE OF COPPER IN THE UNITED STATES AND
ON THE LONDON METAL EXCHANGE

(Cents per pound)

Period	U.S. producers delivered price cathode 1/	Comex first position 2/	LME cash price Grade A
1998:			
August	76.962	73.302	73.501
September	79.277	75.617	74.716
October	75.926	72.266	71.940
November	75.210	71.513	71.377
December	69.915	66.255	66.825
January - December	78.641	75.077	75.008
1999:			
January	68.726	65.066	64.902
February	67.594	63.934	63.974
March	66.164	62.504	62.505
April	70.662	67.002	66.475
May	72.720	69.060	68.528
June	69.037	65.227	64.506
July	79.677	76.017	74.371
August	79.692	75.882	74.715
January - August	71.784	68.087	67.497

1/ Listed as "U.S. producer cathode."

2/ Listed as "Comex high grade first position."

Sources: Platt's Metals Week and American Metal Market.

TABLE 13
NEW YORK AVERAGE BUYING PRICES FOR COPPER SCRAP

(Cents per pound)

Month	Brass mills No. 1 scrap	Refiners No. 2 scrap	Dealers (New York)	
			No. 2 scrap	Red brass turnings and borings
1998:				
August	72.24	59.06	49.00	40.00
September	73.31	60.33	49.00	40.00
October	71.00	57.55	47.00	40.00
November	70.37	57.14	46.00	40.00
December	65.40	52.70	41.91	36.73
January - December	73.55	60.19	49.46	40.33
1999:				
January	64.11	51.17	39.32	36.00
February	63.13	51.07	39.00	36.84
March	62.04	50.75	39.00	38.00
April	65.94	54.58	39.00	38.00
May	68.59	56.68	42.80	38.95
June	64.69	52.57	41.55	36.82
July	74.99	62.69	42.71	36.57
August	74.86	61.67	44.00	37.00
January - August	67.29	55.15	40.92	37.27

Source: American Metal Market.

TABLE 14
U.S. IMPORTS FOR CONSUMPTION OF COPPER (UNMANUFACTURED), BY CLASS 1/

(Metric tons, copper content)

Country or territory	Ore and concentrate			Matte, ash and precipitates			Blister and anodes			Refined		
	1999			1999			1999			1999		
	1998	July	January - July	1998	July	January - July	1998	July	January - July	1998	July	January - July
Argentina	9,930	--	--	--	--	--	--	--	--	--	--	--
Brazil	--	--	--	--	--	--	--	--	--	9,000	--	7,790
Canada	1,690	--	1	140	4	4	82,100	5,650	45,500	265,000	18,300	154,000
Chile	147,000	--	110,000	--	--	--	24,100	11,200	42,400	78,700	27,700	61,900
Denmark	--	--	--	54	--	--	--	--	--	--	--	--
Indonesia	29,400	--	31,900	--	--	--	--	--	--	--	--	--
Japan	--	--	--	240	--	49	(2/)	(2/)	(2/)	8,680	107	2,420
Kazakhstan	--	--	--	--	--	--	--	--	--	--	2,400	10,200
Mexico	4,980	--	500	998	59	612	29,400	3,920	15,000	178,000	2,750	72,600
Namibia	--	--	--	--	--	--	3,360	--	--	--	--	--
Netherlands	--	--	--	551	19	357	--	--	--	4,570	1	1,760
Papua New Guinea	5,900	--	--	--	--	--	--	--	--	--	--	--
Peru	18,200	--	--	--	--	--	6,870	--	2,830	128,000	17,200	107,000
Russia	--	--	--	--	--	--	--	--	--	9,170	3,130	23,400
South Africa	--	--	--	--	--	--	2,830	--	--	--	--	1,130
Taiwan	--	--	--	213	16	119	--	--	--	42	1	42
Other	12	--	12	39	45	65	1,480	--	417	2,510	1,470	2,300
Total	217,000	--	143,000	2,230	143	1,210	150,000	20,700	106,000	683,000	73,000	445,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 15
U.S. EXPORTS OF COPPER (UNMANUFACTURED), BY CLASS 1/

(Metric tons, copper content)

Country or territory	Ore and concentrate			Matte, ash and precipitates			Blister and anodes			Refined		
	1999			1999			1999			1999		
	January -			January -			January -			January -		
	1998	July	July	1998	July	July	1998	July	July	1998	July	July
Australia	45	--	--	18	--	2	58	3	259	29	--	--
Belgium	39	17	17	323	--	(2/)	961	--	37	17	--	399
Canada	33,600	3,540	14,400	12,800	1,250	20,800	16,400	990	14,000	16,100	694	8,800
France	--	--	1	30	--	--	554	--	140	37	18	25
Germany	1,470	--	--	6,660	58	80	92	41	80	294	--	197
Hong Kong	15	18	18	--	--	--	3,350	225	1,980	1,310	38	177
Italy	34	--	--	--	--	--	354	41	281	69	--	7
Japan	1,050	--	--	34	105	105	695	101	745	17,000	--	53
Korea, Republic of	46	--	14	15	--	--	130	53	277	2,870	--	18
Mexico	97	--	8,480	1,060	3	27	1,330	14	47	11,200	112	954
Netherlands	3	70	70	4	--	10	2	--	2	10,100	3	3
Peru	--	--	325	--	--	--	--	--	5	--	--	--
Singapore	--	--	--	6	--	--	726	20	357	687	--	--
Sweden	--	--	--	945	--	--	--	--	--	3	--	--
Taiwan	(2/)	--	--	--	(2/)	14	1,800	123	1,150	19,100	680	3,070
Thailand	18	--	--	--	6	6	46	--	30	5,830	--	--
Other	152	52	108	97	14	83	604	77	597	1,620	18	376
Total	36,500	3,700	23,400	22,000	1,430	21,100	27,100	1,690	20,000	86,200	1,560	14,100

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 16
U.S. COPPER SCRAP TRADE 1/

(Metric tons, gross weight)

Country or territory	Imports						Exports					
	Unalloyed			Alloyed			Unalloyed			Alloyed		
	1999		January - July	1999		January - July	1999		January - July	1999		January - July
	1998	July		1998	July		1998	July		1998	July	
Belgium	80	--	--	476	--	213	2,730	175	871	434	--	209
Bulgaria	1,010	--	--	--	--	--	--	--	--	--	--	--
Canada	30,900	581	3,720	55,800	3,380	27,500	39,600	3,070	13,500	68,200	2,700	23,600
Chile	3,310	1,980	4,190	1,440	21	741	--	--	--	3	--	--
China	--	--	--	101	99	406	28,600	4,810	25,400	20,700	2,630	20,100
Colombia	836	35	354	2,560	376	1,440	--	--	--	4	--	--
Costa Rica	800	72	359	778	41	475	--	--	--	--	--	--
Dominican Republic	942	66	770	1,250	94	509	--	--	--	--	--	20
Germany	6	--	--	54	--	2	7,800	103	638	5,920	119	1,080
Guatemala	519	4	16	969	125	1,060	--	--	--	--	--	--
Hong Kong	--	--	--	113	--	11	14,400	896	4,300	23,600	284	2,310
India	--	--	--	--	--	--	3,460	231	1,780	24,900	1,620	16,400
Japan	19	27	149	126	--	49	10,200	1,150	4,690	10,400	976	6,520
Korea, Republic of	15	--	--	150	54	156	2,720	336	4,490	11,600	1,990	23,200
Malaysia	--	--	--	1,440	80	525	286	73	152	234	203	399
Mexico	12,900	2,840	8,830	35,400	2,460	17,400	1,230	46	273	10,200	1,560	9,490
Singapore	--	--	--	143	23	57	266	186	925	173	2	84
Spain	12	--	16	477	355	858	60	4	2,750	1,860	--	179
Taiwan	109	--	16	720	19	350	2,110	666	2,110	6,210	671	4,510
United Kingdom	--	100	100	1,090	309	810	176	74	555	3,890	155	1,430
Venezuela	462	41	232	1,500	157	867	--	--	--	37	20	20
Other	2,480	219	1,040	6,740	640	3,620	495	4	1,120	5,000	635	3,560
Total	54,400	5,970	19,800	111,000	8,230	57,000	114,000	11,800	63,600	193,000	13,600	113,000

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.